

WHAT IS CLAIMED IS:

1. An image processing device for producing an entire image of a subject by joining a plurality of divided images produced from divided portions defined in said subject and having partially overlapping portions, comprising:

- 5           a setting portion for setting a plurality of sets each including corresponding points in the two divided images having overlap regions overlapped together;
- a transforming portion for performing geometric transformation of one or both of the two divided images based on said plurality of
- 10          corresponding point sets; and
- a joining portion for joining the two divided images based on the plurality of corresponding point sets after the geometric transformation, wherein
- higher importance is placed on a specific portion of said
- 15          overlapping regions compared with the other in the geometric transformation.

2. The image processing device according to claim 1, wherein, said setting portion sets in said specific portion the corresponding point sets larger in number than those in said other portion for placing importance on said specific portion.

3. The image processing device according to claim 1, wherein, said transforming portion performs geometric transformation using the transformation parameter obtained by giving high weight to the corresponding point set in said specific portion for placing importance on

5          said specific portion.

4. The image processing device according to claim 1, wherein, said subject is divided into three or more divided images, and the third divided image overlaps with said overlap regions in said specific

portion.

5. An image processing device for joining at least first and second divided images produced from divided portions defined in a subject and having partially overlapping portions, comprising:

5 a detecting portion for detecting a relative positional relationship between said first and second divided images having overlap regions overlapped together;

10 a setting portion for setting a plurality of sets each including corresponding points in the two divided images within said overlapping regions based on the positional relationship detected by said detecting portion; and

a joining portion for joining said two divided images based on said corresponding point sets.

6. The image processing device according to claim 5, wherein, said first and second divided images are rectangular, and each have one side overlapping with the other.

7. The image processing device according to claim 6, wherein, said setting portion detects a characteristic point in the one side of said first divided image, finds a characteristic point corresponding to said detected characteristic point in the one side of said second divided image, 5 and sets said characteristic points as the corresponding point set.

8. The image processing device according to claim 7, wherein, said setting portion does not detect said characteristic point from a portion on the end, in a shifting direction along said one side, of said one side if said detected positional relationship shows that said first divided 5 image is shifted in said shifting direction with respect to said second divided image.

9. An image processing method comprising the steps of:

obtaining a plurality of divided images produced from divided portions defined in a subject and having partially overlapping portions; and

5 producing an entire image representing said subject by joining said plurality of produced divided images, wherein

the joining of said divided images is performed while placing higher importance on a specific portion among said overlapping regions.

10. The image processing method according to claim 9, wherein said plurality of divided images include at least first, second, third and fourth divided images arranged in upper right, upper left, lower right and lower left positions, and said four divided images overlap with each other in a region defined by a central portion of said entire image.

11. The image processing method according to claim 10, wherein said specific portion is near said central portion of the overlap region in the processing of joining said first and second divided images.

12. The image processing method according to claim 9, further comprising the steps of:

5 setting the plurality of sets of corresponding points corresponding to each other and located in the two divided images having the overlap regions overlapping with each other; and

performing geometric transformation on one or both of said two divided images based on said plurality of corresponding point sets, wherein

10 said two divided images are joined together after said geometric transformation.

13. An image processing method comprising the steps of:  
obtaining a plurality of divided images produced from divided portions defined in a subject and having partially overlapping portions;  
detecting a direction of positional shift between the two divided

5 images having the overlap regions overlapping with each other;  
setting a plurality of sets each including corresponding points in  
said two divided images based on the detected positional shift direction;  
and

10 joining said two divided images based on the set corresponding  
point sets.

14. The image processing method according to claim 13, wherein,  
characteristic points corresponding to each other and located in the  
overlap regions of the divided images are detected based on the detected  
positional shift direction, and the detected characteristic points are set as  
5 the corresponding point set.

15. The image processing method according to claim 14, wherein,  
the characteristic point is detected in the overlap region of one of  
said two divided images, a point corresponding to the detected  
characteristic point is detected in the overlap region of the other divided  
5 image, and a set of said characteristic points is set as the corresponding  
point set.

16. The image processing device according to claim 14, wherein,  
the characteristic points are detected in the overlap regions of said  
two divided images, respectively, and a set of the characteristics points  
corresponding to each other is set as the corresponding point set.

17. An image processing program causing a computer to execute  
the steps of:

5 obtaining a plurality of divided images produced from divided  
portions defined in a subject and having partially overlapping portions;  
and

producing an entire image representing said subject by joining said  
plurality of produced divided images, wherein

the joining of said divided images is performed while placing

higher importance on a specific portion among said overlapping regions.

18. An image processing program causing a computer to execute the steps of:

obtaining a plurality of divided images produced from divided portions defined in a subject and having partially overlapping portions;

5 detecting a direction of positional shift between the two divided images having the overlap regions overlapping with each other;

setting a plurality of sets each including corresponding points in said two divided images based on the detected positional shift direction; and

10 joining said two divided images based on the set corresponding point sets.